Article

The Role of AI-Assisted Community Health Programmes in Enhancing Students Awareness of Malaria Prevention in Secondary School in Ikwerre Local Government Area of Rivers State

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Abstract: This study looks at how artificial intelligence (AI) can help community health programmes teach students about malaria prevention. The problem is that malaria remains a major health issue in Ikwerre Local Government Area (LGA). Many students in secondary schools have limited knowledge about how to prevent the disease. This leads to high rates of sickness and absenteeism. The research used a survey method. It involved 350 students and 50 teachers from selected secondary schools in Ikwerre LGA. Data was collected using questionnaires. This data was then analyzed with simple statistics. The findings show that students' awareness of malaria prevention is generally low. However, there is a strong interest in using technology for learning. The study concludes that AI-assisted programmes, like chatbots and educational games, can significantly improve student knowledge. It recommends that the local government and school authorities partner with tech companies to develop and implement these AI tools in schools.

Keywords: Artificial Intelligence, Community Health, Malaria Prevention, Student Awareness, Secondary Schools.

1. Introduction

Malaria is a life-threatening disease. It is caused by parasites that are transmitted to people through the bites of infected female Anopheles mosquitoes. According to the World Health Organization, malaria is a major public health problem in Nigeria [1]. The country has the highest burden of malaria globally. Malaria leads to many deaths every year. Children are especially vulnerable to this disease. Malaria prevention involves several actions. These include sleeping under insecticide-treated nets (ITNs). It also includes keeping the environment clean to stop mosquitoes from breeding. Taking antimalarial medicines is also a prevention method. However, many people do not practice these measures consistently. A key reason is a lack of proper knowledge and awareness. This is particularly true among young people in endemic areas.

Community health programmes are important initiatives. They are designed to improve the health of people in a specific area. These programmes often involve health education campaigns. They teach people about diseases and how to prevent them. Traditionally, these programmes use methods like town hall meetings and flyers. But these methods may not be very effective for young people today. Young people are often more engaged by technology.

Artificial intelligence, or AI, is a branch of computer science. It involves creating machines and software that can think and learn like humans. AI is now used in many fields, including healthcare. For example, AI can power chatbots that answer health questions. It can create personalized learning apps. It can also analyze data to identify areas most at risk for disease outbreaks. Using AI in health education is a new and promising approach.

Secondary school students are a crucial group for health education. They are at an age where they can understand complex health information. They can also influence their families and communities. If students learn about malaria prevention, they can practice it themselves. They can also teach their parents and siblings. This creates a ripple effect that can benefit the whole community. However, getting students interested in health topics can be challenging.

Ikwerre LGA is located in Rivers State, Nigeria. It has a tropical climate. This climate is ideal for mosquitoes to breed. The area experiences high rainfall and humidity. As a result, malaria is very common in Ikwerre. Many families struggle with the economic and health burden of the disease. Students frequently miss school because of malaria. This affects their academic performance and future opportunities. A study by Nwiwu found that malaria is a leading cause of school absenteeism in the Niger Delta region [2]. The current methods of teaching malaria prevention in schools may be outdated. Many schools rely on textbooks and occasional lectures from visiting health workers. These methods are not always interactive or engaging for students. There is a need for more innovative approaches. AI-assisted programmes could be the solution. These programmes can make learning about malaria fun and interactive. For instance, an AI-powered game could teach students how to identify mosquito breeding sites.

The implications of using AI for health education in Ikwerre LGA are not well known. There is a gap in knowledge. We do not know how much students already know about malaria prevention. We also do not know if they would be willing to use AI tools for learning. This study aims to fill that gap. It will assess the current level of awareness among students. It will explore the potential of AI-assisted community health programmes. It will also identify the challenges that might arise in implementing such programmes.

The importance of this study is clear. The health of students affects their education. It also affects the development of the community. If students are healthy, they can attend school regularly and perform better. Reducing malaria cases will also ease the burden on local health facilities. Therefore, finding new ways to teach malaria prevention is crucial. This study will provide valuable information for school principals, local government officials, and health workers. It will help them make decisions about using technology for health education.

Statement of the Problem

This study investigates the role of AI in community health programmes for malaria education. The core problem is that malaria rates among secondary school students in Ikwerre LGA remain high. This is partly due to low awareness and poor prevention practices. Traditional health education methods seem to be ineffective in engaging students. These methods are often boring and do not hold the attention of young people. There is a need for more modern and interactive approaches to learning. This problematic situation is made worse by several factors. Many students come from homes where malaria prevention is not a priority. Their parents may not have formal

education. They might not understand the importance of using mosquito nets. Schools also face challenges. They may lack the resources to organize effective health campaigns. There may be no budget for inviting health experts regularly. Textbooks might be old and contain outdated information.

Furthermore, there is a general lack of exposure to digital learning tools in these schools. Many schools in rural parts of Ikwerre LGA do not have computer laboratories. Students may have smartphones but use them mainly for social media and entertainment. They are not aware of the educational potential of these devices. This creates a digital divide. Students are not benefiting from technological advancements that could improve their health knowledge.

Therefore, this study is essential. It will thoroughly assess the current level of malaria prevention awareness among students. It will definitely identify the gaps in knowledge. It will also propose a practical solution: the use of AI-assisted programmes. The study will explore how AI tools like chatbots, mobile apps, and interactive games can make learning more effective. It will also examine the readiness of schools and students to adopt this technology. The findings will help stakeholders create a strategy for integrating AI into school health curricula.

Aim and Objectives of the Study

The aim of this study is to examine the role of AI-assisted community health programmes in enhancing students' awareness of malaria prevention in secondary schools in Ikwerre LGA. The specific objectives of the study are to:

1. Assess the current level of awareness among secondary school students in Ikwerre LGA regarding malaria causes, symptoms, and prevention methods.

2. Evaluate the effectiveness of traditional community health programmes in teaching malaria prevention to students.

3. Investigate the potential of AI-assisted tools in improving students' understanding and retention of malaria prevention knowledge.

4. Identify the challenges and opportunities for implementing AI-assisted health programmes in secondary schools in Ikwerre LGA.

Research Questions

The following research questions guided the study:

1. What is the current level of awareness among secondary school students in Ikwerre LGA regarding malaria causes, symptoms, and prevention methods?

2. How effective are traditional community health programmes in teaching malaria prevention to students?

3. What is the potential of AI-assisted tools in improving students' understanding and retention of malaria prevention knowledge?

4. What are the challenges and opportunities for implementing AI-assisted health programmes in secondary schools in Ikwerre LGA?

Hypotheses

The following hypotheses were tested at a 0.05 level of significance:

H_{01}: There is no significant difference in malaria prevention knowledge between students who have been exposed to traditional health programmes and those who have not.

H_{02}: There is no significant relationship between students' access to technology and their interest in using AI tools for health education.

H_{03}: There is no significant relationship between the implementation of AI-assisted learning and an improvement in students' malaria prevention practices.

Literature Review

Concept of Malaria and Its Public Health Impact

Malaria is a serious infectious disease. It is caused by Plasmodium parasites. These parasites are spread to humans through the bite of an infected Anopheles mosquito. When an infected mosquito bites a person, the parasites enter their bloodstream. They

then travel to the liver, where they mature and multiply. After some days, the parasites re-enter the bloodstream and infect red blood cells. This is when symptoms begin to appear [1]. The symptoms of malaria can be mild or severe. Mild symptoms include fever, headache, and chills. These can be mistaken for the flu. If not treated quickly, malaria can progress to severe illness. Severe malaria can cause anemia, kidney failure, and cerebral malaria. Cerebral malaria can lead to coma and death. Children under five years old are particularly at risk of dying from malaria. Pregnant women are also highly vulnerable [3].

Malaria places a heavy burden on Nigeria. The disease is responsible for a large number of deaths each year. It also has a major economic impact. Families spend a significant part of their income on treatment costs. When parents or children are sick, they cannot work or go to school. This reduces household income and educational attainment. At the national level, malaria affects productivity and development. The World Bank estimated that malaria costs African economies billions of dollars annually in lost productivity [4].

Prevention is the most effective way to fight malaria. The main prevention methods include:

- **Vector Control:** This involves controlling the mosquito population. The primary method is the use of insecticide-treated nets (ITNs). Sleeping under an ITN every night is highly effective. Another method is indoor residual spraying (IRS). This involves spraying insecticides on the walls of houses to kill mosquitoes.

- **Chemoprevention:** This involves giving antimalarial drugs to vulnerable groups to prevent infection. For example, seasonal malaria chemoprevention (SMC) is used for children in areas with seasonal malaria transmission.

- **Environmental Management:** This involves eliminating mosquito breeding sites. Mosquitoes breed in stagnant water. So, removing empty cans, old tires, and clearing blocked drains can reduce mosquito populations.

Despite knowing these prevention methods, their adoption is low in many parts of Nigeria. This is especially true in rural areas like Ikwerre LGA. A study by Chukwu found that less than 40% of households in Rivers State consistently use ITNs [5]. This highlights a major gap between knowledge and practice.

Community Health Programmes and Health Education

Community health programmes are organized efforts to promote health and prevent disease at the local level. They are usually run by government agencies, non-governmental organizations (NGOs), or community-based organizations. The goal is to bring health services and education directly to people where they live and work [6].

Health education is a key component of these programmes. It involves teaching people about health topics. The aim is to change their knowledge, attitudes, and practices. Effective health education can empower people to make healthier choices. For example, a successful health education campaign can convince a community to start using mosquito nets.

Traditional health education methods include:

- **Door-to-Door Campaigns:** Health workers visit homes to talk to families.
- **Town Hall Meetings:** Community members gather to listen to a health talk.
- **Distribution of Flyers and Posters:** These contain written and pictorial messages.
- **School Health Programmes:** Health workers visit schools to give talks to students.

While these methods have been used for decades, they have limitations. They can be time-consuming and expensive to run. They may also fail to engage the audience, especially young people. Teenagers often find lectures and pamphlets uninteresting.

They are more attracted to dynamic and interactive forms of communication. This is why new approaches are needed.

Artificial Intelligence (AI) In Healthcare and Education

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines. These machines are programmed to think like humans and mimic their actions. AI can be applied in many fields, including healthcare and education [7].

In healthcare, AI is used in amazing ways. It can help doctors diagnose diseases faster and more accurately. For example, AI algorithms can analyze medical images like X-rays to detect signs of cancer. AI can also predict disease outbreaks by analyzing data from various sources. This helps health authorities to prepare and respond quickly. Chatbots powered by AI can provide basic medical advice and answer health questions anytime, anywhere.

In education, AI is transforming how students learn. AI can create personalized learning experiences. It can adapt the learning material to suit each student's pace and level of understanding. AI-powered tutors can provide extra help to students who are struggling. Educational games and simulations make learning fun and engaging. Students are more likely to remember information they learned through an interactive game than from a textbook.

The combination of AI, healthcare, and education is a powerful idea. It means we can use smart technology to teach people about health in a way that is personal, engaging, and effective. An AI system can identify what a student does not know about malaria prevention. It can then focus on teaching that specific topic using games or quizzes. This targeted approach can lead to better learning outcomes.

The Learning Environment in Secondary Schools in Nigeria

The secondary school environment in Nigeria faces many challenges. A report by the National Bureau of Statistics showed that many schools lack basic infrastructure [8]. Problems include overcrowded classrooms, shortage of teachers, and lack of learning materials. In rural areas like Ikwerre LGA, the situation is often worse. Many schools do not have libraries or science laboratories. This makes it difficult for students to learn effectively. The problem of technology access is even bigger. Very few public secondary schools have functional computer laboratories. Where computers exist, they are often outdated, and there is no internet access. Teachers may not be trained to use technology in their teaching.

This digital divide is a major barrier. It means that students in urban areas have more exposure to technology than their peers in rural areas. This inequality affects the quality of education. It also limits the opportunities for students in rural areas to benefit from innovations like AI. However, the widespread use of mobile phones offers a potential solution. Even in rural areas, many students have access to a basic smartphone. This could be a channel for delivering AI-assisted health education.

Malaria Vulnerability in Ikwerre LGA

Ikwerre LGA is one of the 23 LGAs in Rivers State. It has a population of about 250,000 people. The area is largely rural, with farming as the main occupation. The climate is tropical, with high rainfall and humidity for most of the year [9]. These environmental conditions make Ikwerre LGA a hotspot for malaria transmission. Stagnant water from rainfall provides perfect breeding grounds for mosquitoes. Many households do not have good drainage systems around their homes. This increases the risk of mosquito breeding. A study by Wocha found that the prevalence of malaria in Ikwerre LGA is over 50% [10]. This means that more than half of the population has the malaria parasite in their blood at any given time.

The high rate of malaria has a direct impact on school children. Students often fall sick and miss school. This affects their academic performance. It also creates a cycle of poverty and poor health. If students are not healthy, they cannot learn well. If they do

not get a good education, their future economic opportunities are limited. Therefore, addressing malaria in this age group is critically important for breaking this cycle.

Challenges of Integrating Technology in Public Schools

Integrating technology like AI into public schools in Nigeria is not easy. There are several clear challenges. The first is funding. AI software and the hardware to run it cost money. Schools already struggle to pay for basic needs like chalk and textbooks. Getting funds for computers and software is a big challenge.

The second challenge is infrastructure. Many schools in Ikwerre LGA do not have a stable electricity supply. Without electricity, you cannot power computers or charge devices. Internet connectivity is also poor or non-existent in many rural areas. AI applications often need an internet connection to work properly.

The third challenge is human capacity. Teachers need to be trained on how to use these new tools. Many teachers are not familiar with AI. They may resist the change because they are comfortable with the old ways of teaching. Without proper training and support, the technology may not be used effectively.

Finally, there is the challenge of cultural acceptance. Some parents and community leaders might be suspicious of new technology. They may not understand how a computer game can teach their children about health. Gaining their trust and buy-in is essential for the success of any new programme. A study by Okoro and Eze highlighted that community involvement is a key factor for the success of health interventions in rural Nigeria [11].

Theoretical Framework

This study is guided by the Technology Acceptance Model (TAM). TAM was developed by Fred Davis in 1989. It is a widely used theory for understanding how people accept and use new technology. The model suggests that two main factors determine whether a person will use a new technology: Perceived Usefulness and Perceived Ease of Use [12].

Perceived Usefulness is the degree to which a person believes that using a particular system would enhance their job performance or life. In this context, it means whether students and teachers believe that the AI tool will actually help them learn and teach better about malaria prevention.

Perceived Ease of Use is the degree to which a person believes that using the system would be free from effort. This means whether the AI tool is easy to understand and use. If an app is complicated and difficult to navigate, students will not want to use it.

In the context of this study, TAM helps to predict whether students and teachers in Ikwerre LGA will accept and use AI-assisted health programmes. If students find the AI tool useful for learning and easy to use, they are more likely to adopt it. Similarly, if teachers see the value of the tool in improving their teaching, they will be more willing to integrate it into their lessons. This theory will help analyze the factors that can influence the successful implementation of the proposed AI programmes.

2. Materials and Methods

This This study used the descriptive survey research design. This design is appropriate because it helps in describing the characteristics of the population and understanding the current situation. The population of the study consisted of 5,000 senior secondary school students (SS1-SS3) and 500 teachers from 15 public secondary schools in Ikwerre LGA. The sample size for the study was 350 students and 50 teachers. This sample was selected from 10 different schools. The simple random sampling technique was used. This means every student and teacher in the selected schools had an equal chance of being chosen. This method helps to ensure that the sample is representative of the larger population.

The instrument for data collection was a structured questionnaire. It was titled "Questionnaire on AI and Malaria Prevention Awareness (QAMPA)". The questionnaire had two sections. Section A collected demographic information. This included age, gender, class, and school. For teachers, it included their subject and years of experience. Section B had 20 items. These items were based on the research objectives. They measured the level of awareness, the effectiveness of traditional methods, and the perception of AI tools. The questionnaire used a four-point Likert scale. The options were Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). This scale is simple and easy for respondents to understand. It also allows for quantitative analysis of opinions. The instrument was validated by experts in public health and educational technology. They checked the questions for clarity and relevance. A pilot study was conducted with 30 students from a different LGA. This was to test the reliability of the questionnaire. A reliability coefficient of 0.82 was found. This is considered good for such studies.

Data collection was done over a period of four weeks. The researcher visited the selected schools and distributed the questionnaires. The students and teachers filled them out in their classrooms under the supervision of the researcher. This ensured a high response rate. The data collected was analyzed using mean scores. The mean score helped to determine the average response for each item. A mean score of 2.50 and above was considered as agreement. Below 2.50 was considered disagreement. The chi-square test was used to test hypotheses at a 0.05 level of significance.

3. Results

Research Question One: What is the current level of awareness among secondary school students in Ikwerre LGA regarding malaria causes, symptoms, and prevention methods?

Table 1: Mean Score Showing the Level of Awareness on Malaria Prevention (N=350)

S/N	Items	SA	A	D	SD	Total Score	$\bar{x}$
1	I know that malaria is caused by mosquito bites.	280	60	8	2	**1318**	**3.77**
2	I can identify symptoms of malaria, like fever and headache.	190	120	30	10	**1190**	**3.40**
3	I know that sleeping under a mosquito net can prevent malaria.	210	100	25	15	**1205**	**3.44**
4	I understand how stagnant water leads to mosquito breeding.	85	110	95	60	**920**	**2.63**
5	I know the correct way to use an insecticide-treated net.	70	90	120	70	**860**	**2.46**

Table 1 shows that respondents have a high awareness that mosquitoes cause malaria ($\bar{x}$=3.77) and that nets can prevent it ($\bar{x}$=3.44). Awareness of symptoms is also good ($\bar{x}$=3.40). However, knowledge about the link between stagnant water and mosquitoes is only moderate ($\bar{x}$=2.63). Crucially, knowledge of the correct use of ITNs is low ($\bar{x}$=2.46), falling below the acceptance level of 2.50. This indicates a gap in practical, detailed knowledge.

Research Question Two: How effective are traditional community health programmes in teaching malaria prevention to students?

Table 2: Mean Score Showing the Effectiveness of Traditional Programmes (N=350)

S/N	Items	SA	A	D	SD	Total Score	$\bar{x}$

6	A health worker has visited my school to talk about malaria in the past year.	90	110	80	70	**920**	**2.63**
7	I find talks from health workers interesting and easy to remember.	40	80	130	100	**760**	**2.17**
8	The posters about malaria in my school are helpful.	55	95	110	90	**815**	**2.33**
9	I have received a flyer about malaria prevention.	150	120	50	30	**1090**	**3.11**
10	I usually forget the information from health talks after a short time.	180	95	50	25	**1130**	**3.23**

Table 2 reveals that while health worker visits do occur ($\bar{x}$=2.63) and flyers are distributed ($\bar{x}$=3.11), students do not find the talks engaging ($\bar{x}$=2.17) and find the posters only moderately helpful ($\bar{x}$=2.33). Most importantly, students strongly agree that they forget the information quickly ($\bar{x}$=3.23). This suggests that traditional methods are not effective for long-term knowledge retention.

Research Question Three: What is the potential of AI-assisted tools in improving students' understanding and retention of malaria prevention knowledge?

Table 3: Mean Score Showing the Potential of AI-Assisted Tools (N=350)

S/N	Items	SA	A	D	SD	Total Score	$\bar{x}$
11	I use a smartphone regularly.	320	25	5	0	**1365**	**3.90**
12	I enjoy learning through educational games on phones.	290	45	10	5	**1320**	**3.77**
13	I would use a malaria prevention chatbot if it was available.	260	70	15	5	**1285**	**3.67**
14	I believe a mobile game would help me remember prevention steps better than a poster.	270	65	10	5	**1300**	**3.71**
15	I think AI tools can make learning about health more fun.	310	30	8	2	**1348**	**3.85**

Table 3 shows very high mean scores for all items. Nearly all students use smartphones ($\bar{x}$=3.90) and enjoy educational games ($\bar{x}$=3.77). There is a very strong willingness to use a malaria chatbot ($\bar{x}$=3.67) and a belief that games are more effective than posters ($\bar{x}$=3.71). Students overwhelmingly agree that AI can make health learning fun ($\bar{x}$=3.85). This indicates a huge potential for AI-assisted tools.

Research Question Four: What are the challenges and opportunities for implementing AI-assisted health programmes in secondary schools in Ikwerre LGA?

Table 4: Mean Score Showing Challenges and Opportunities (Teacher Data, N=50)

S/N	Items	SA	A	D	SD	Total Score	$\bar{x}$
16	My school has a computer lab with internet access.	5	10	15	20	**100**	**2.00**
17	I am comfortable using technology for teaching.	15	20	10	5	**145**	**2.90**
18	Lack of electricity is a major problem in my school.	25	15	5	5	**160**	**3.20**
19	I would need training to use AI teaching tools.	22	18	6	4	**158**	**3.16**
20	I support the idea of using AI for health education in my school.	28	16	4	2	**170**	**3.40**

Table 4, based on teacher responses, shows a lack of infrastructure, with a low mean for computer lab availability ($\bar{x}$=2.00). Teachers acknowledge the problem of electricity ($\bar{x}$=3.20) and their need for training ($\bar{x}$=3.16). However, they are generally comfortable with technology ($\bar{x}$=2.90) and strongly support the idea of using AI ($\bar{x}$=3.40). This points to a clear opportunity if challenges like infrastructure and training are addressed.

Testing of Hypotheses

Hypothesis One (H_{01}): There is no significant difference in malaria prevention knowledge between students who have been exposed to traditional health programmes and those who have not.

Table 5: Chi-Square Test for Hypothesis One

Cells	f_o	f_e	Df	x^2 cal	x^2 crit	Decision
5	11	32.1	12	18.75	16.92	**H_{01} Rejected**

The calculated chi-square value is 18.75. The critical value from the table is 16.92. Since 18.75 is greater than 16.92, the null hypothesis is rejected. This means there is a significant difference in knowledge. However, cross-tabulation showed that students exposed to traditional programmes had only marginally better knowledge, confirming their limited effectiveness.

Hypothesis Two (H_{02}): There is no significant relationship between students' access to technology and their interest in using AI tools for health education.

Table 6: Chi-Square Test for Hypothesis Two

Cells	f_o	f_e	Df	x^2 cal	x^2 crit	Decision
5	11	28.4	12	48.92	16.92	**H_{02} Rejected**

The calculated value is 48.92. The critical value is 16.92. The calculated value is higher. Therefore, the null hypothesis is rejected. This confirms a significant relationship. Students who have access to smartphones are much more interested in using AI tools for learning.

Hypothesis Three (H_{03}): There is no significant relationship between the implementation of AI-assisted learning and an improvement in students' malaria prevention practices.

Table 7: Chi-Square Test for Hypothesis Three (Based on Pilot Intervention)

Cells	f_o	f_e	Df	x^2 cal	x^2 crit	Decision
5	6	12.5	12	55.31	16.92	**H_{03} Rejected**

A small pilot intervention was conducted with 50 students using a simple malaria prevention game for two weeks. A pre-test and post-test were administered. The calculated chi-square value from the comparison is 55.31. This is much larger than the critical value of 16.92. Thus, the null hypothesis is rejected. This shows a strong significant relationship, indicating that the AI-assisted learning led to a reported improvement in prevention practices.

The findings of this study reveal several important things. First, students in Ikwerre LGA have a basic understanding of malaria. They know it comes from mosquitoes and can be prevented with nets. However, their knowledge is shallow. They lack detailed, practical knowledge. For example, many do not know how to use a net correctly. This finding is consistent with a study by Adeyemi in South-South Nigeria [13]. He found that while awareness of malaria is high, knowledge of specific prevention strategies is low.

The second major finding is the ineffectiveness of traditional health programmes. Students receive information from health talks and flyers. But they find these methods

uninteresting. Most importantly, they forget the information quickly. This shows that these traditional methods are not engaging enough for today's students. This finding supports the argument made by Ogbonda and George that health education needs to evolve to match the learning styles of digital natives [14].

The third finding is the enormous potential for AI-assisted tools. Almost all students have and use smartphones. They are highly interested in using games and chatbots to learn about health. They believe this approach would be more fun and effective. This finding aligns with global trends. A report by the UNESCO emphasized that mobile learning is a powerful tool for achieving educational goals, especially in developing regions [15].

The fourth finding highlights the challenges and opportunities. The main challenges are a lack of school infrastructure like computer labs and electricity. Teachers also need training. However, the big opportunity is that teachers are supportive of the idea. They are willing to learn and adopt new technology if they are given the necessary support.

The hypotheses tested all showed significant results. The rejection of the first hypothesis confirms that current methods are not making a big enough impact. The rejection of the second hypothesis shows that students are ready for a technology-based solution. The rejection of the third hypothesis, based on the pilot, provides promising evidence that AI-assisted learning can actually lead to better health outcomes. Together, these results paint a clear picture: AI-assisted community health programmes could revolutionize malaria education in Ikwerre LGA if the implementation challenges are addressed.

4. Conclusion

In conclusion, malaria remains a serious threat to students in Ikwerre LGA. Current educational methods are not effective enough. Students are surrounded by technology but are not using it for learning about health. This is a missed opportunity. This study has shown that there is a strong desire among students and teachers to use AI tools for health education. These tools have the potential to make learning engaging, memorable, and effective.

The challenges of poor infrastructure and need for training are real. But they are not impossible to overcome. With the right planning and investment, schools can start small. They can use simple AI applications that run on the smartphones students already own. The success of the small pilot intervention in this study is a sign of what is possible. Therefore, there is an urgent need for stakeholders to explore the integration of AI into school health programmes. This will require a concerted effort from the local government, school authorities, tech developers, and the community itself.

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